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DEPARTMENT OF PUBLIC HEALTH AND HUMAN SERVICES

BRIAN SCHWEITZER
GOVERNOR

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STATE OF MONTANA

www.dphhs.mt.gov

Heart disease, stroke and cardiovascular risk factors, such as high blood pressure, have most likely touched every Montanan in some way. Since heart disease and stroke are the first and fourth leading causes of death in our state, prevention of these conditions is vital and will have a dramatic influence on quality of life and healthcare costs. But effective treatment for those who already have these conditions also needs to be a priority – along with reducing disparities that impact healthcare.

We are proud that so many organizations, including the Montana Cardiovascular Disease/Obesity Prevention Task Force, are working together to address these important health issues. We urge all readers to also participate in this effort. It may be as simple as recognizing the signs and symptoms of heart attack and stroke. It could involve promoting policy change in your place of employment to help workers lower their risk of cardiovascular disease. Or it may mean joining the existing partners to help implement this heart disease and stroke state plan.

Montana can be the model for effective actions a rural state can make to reduce the burden of heart disease and stroke.

BRIAN SCHWEITZER
Governor
State of Montana

JOAN MILES
Director
Montana Department of Public Health
and Human Services

ACKNOWLEDGEMENTS

This state plan was prepared by the Montana Cardiovascular Health Program, Montana Department of Public Health and Human Services, in collaboration with the Cardiovascular Disease/Obesity Prevention Task Force.

The expertise of the task force members and input provided by the state plan work groups and Native American committee were invaluable in developing this state plan. We also would like to acknowledge Judy Garrity, who helped transform the vision of the work groups into a working document.

MONTANA
CARDIOVASCULAR HEALTH PROGRAM

EXECUTIVE SUMMARY

The Montana Heart Disease and Stroke State Plan for 2006-2010 outlines goals, objectives, and specific strategies that can realistically be achieved within a five-year period to improve the health of Montanans. The objectives and population-based strategies address prevention, treatment and control of heart disease, stroke and major risk factors including high cholesterol and high blood pressure.

HIGHLIGHTS OF THE STATE PLAN

Key strategies in this five-year plan include:

- Increasing Montanans' awareness of heart attack and stroke signs and symptoms and the need to call 911 so that they receive timely care.
- Establishing systems within hospitals to ensure patients who have had a heart attack or stroke receive care that follows national guidelines.
- Training Emergency Medical Service (EMS) teams and 911 staff on use of a stroke screening tool for rapid identification and transport of stroke patients.
- Enhancing the efforts of Indian Health Service and tribal health departments to reduce cardiovascular disease in Montana American Indians.
- Creating systems within clinics and physicians' offices to improve the management of patients' blood pressure, cholesterol levels and diabetes.
- Enhancing policies in worksites for blood pressure and cholesterol screening/referrals and improving insurance coverage of medications for heart disease, stroke, and related risk factors.
- Promoting tobacco cessation and tobacco-free work environments.

CALL TO ACTION

The state plan objectives can only be accomplished with the joint efforts of healthcare and business leaders, insurers, public health agencies, policymakers, and healthcare organizations serving Montanans. Our state has already made inroads in decreasing the burden of heart disease and stroke by forming task forces and work groups to address these urgent health issues. These partners are committed to making improvements in our residents' health. The Cardiovascular Health Program encourages you to join this effort for a heart-healthy, stroke-free Montana.

MONTANA'S HEART DISEASE AND STROKE STATE PLAN

As heart disease, stroke and related risk factors impact a large portion of our residents, all Montanans should be concerned about preventing and managing these health conditions. In many cases, heart disease and stroke can be prevented through lifestyle behavior and controlling risk factors such as high blood pressure, high cholesterol, diabetes, and obesity.

The Montana Heart Disease and Stroke State Plan 2006-2010 focuses on collaborative activities with a variety of partners to accomplish the stated goals and objectives. This plan updates the 2000 cardiovascular disease (CVD) state plan that was previously developed by the Montana Cardiovascular Health Program and the CVD/Obesity Prevention Task Force. It reflects national priorities related to heart disease and stroke.

PURPOSE OF THE PLAN

The purpose of the plan is to delineate activities that will decrease morbidity and mortality associated with heart disease and stroke, reduce disease risk factors among all Montanans, and eliminate health disparities in the treatment of heart disease and stroke.

OVERARCHING GOALS

Montana has adopted the Healthy People 2010 overarching goals to:

- Increase quality and years of healthy life.
- Eliminate health disparities.

PRIORITY POPULATIONS

Certain populations have a high prevalence of heart disease and stroke risk, and addressing these disparities is important in the overall effort to control CVD in Montana. Based on the state's burden of CVD, the following priority populations have been identified:

- ***Adults over age 45 who are at risk for heart attack and stroke due to cardiovascular risk factors***
  Risk factors include high blood pressure, diabetes, elevated cholesterol, obesity, smoking, sedentary lifestyle, previous cardiovascular event, or family history of CVD.
- ***Adults over age 65***
  Older adults are more likely to experience a heart attack or stroke than young or middle-aged adults.
- ***American Indians***
  Montana American Indians are dying from CVD at an alarming rate. They also have a higher prevalence of certain risk factors including tobacco use, diabetes, and obesity.

FRAMEWORK

The Montana Heart Disease and Stroke State Plan 2006-2010 emphasizes policies/systems change and environmental supports to impact heart disease and stroke morbidity and mortality on a population-wide basis.

ORGANIZATION OF THE PLAN

The social domains of health care, community, and worksite are presented in separate sections of the plan. Each section was developed by a work group of key stakeholders and contains a brief overview, measurable objectives, and strategies pertinent to that particular domain.

In conjunction with development of the Montana Heart Disease and Stroke State Plan, the work groups also identified objectives and strategies for a complementary state plan focusing on obesity, nutrition, and physical activity. The obesity state plan will be implemented by the Montana Nutrition and Physical Activity Program and other partners. The Montana Tobacco Use Prevention Program has also developed a 5-year plan. These three state plans will provide a comprehensive approach to addressing heart disease and stroke risk factors in Montana.

DISEASE BURDEN SUMMARY

In 2003, the Montana Department of Public Health and Human Services (DPHHS) produced a report describing the burden of heart disease and stroke and their associated risks.[1] Using data from the Montana Office of Vital Statistics, the Behavioral Risk Factor Surveillance Survey (BRFSS), Youth Risk Behavior Survey (YRBS) and Medicare hospitalization claims for Montana residents, the burden report presented data on the mortality from cardiovascular disease, heart disease, and stroke along with recent trends. This report also presented data about the prevalence and trends in selected modifiable cardiovascular risk factors, along with information about how well adults in Montana recognize the signs and symptoms of heart attack and stroke. The data have been updated and condensed to reflect current information concisely.

DEMOGRAPHICS

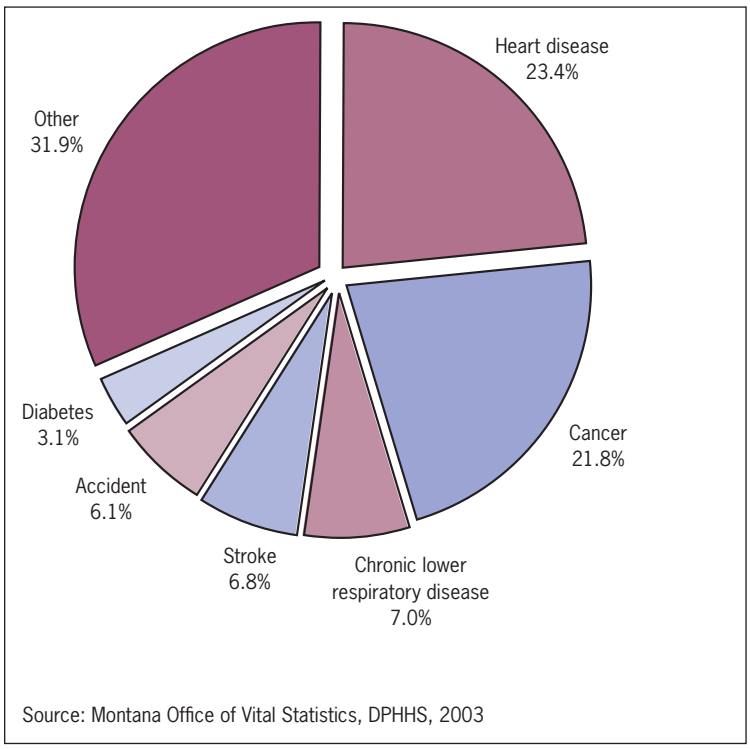
In 2003, Montana's population was 892,497 with a median age of 39 years. Over fifty percent were women, and approximately 13% of Montana residents were 65 years or older.[2] Ninety percent of Montana's residents were white and the largest ethnic group, American Indians, accounted for 6.4% of the population.

Montana is sparsely populated with a population density of only 6.2 persons per square mile. Over 60% of the population lives in one of eight "small urban" counties (ranging in population from 16,673 to 129,352). A small urban county is defined as a non-metropolitan county with a city of > 10,000 population or a county in a metropolitan area with less than 1 million population. The remaining 48 counties in the state are defined as "frontier," meaning a non-metropolitan county without a city of 10,000 or more population.

LEADING CAUSES OF DEATH IN MONTANA AND THE US

In Montana, approximately 30% of all deaths in 2003 were attributed to cardiovascular disease. Heart disease and stroke were the first and fourth leading causes of death, respectively. (Figure 1)

Figure 1. Leading causes of death in Montana in 2003.



Source: Montana Office of Vital Statistics, DPHHS, 2003

[1] *The Burden of Cardiovascular Disease in the State of Montana 2003*. View the entire report at http://www.dphhs.state.mt.us/hpsd/cardiovascular/pdf/cardio_disease_report.pdf

[2] http://factfinder.census.gov (data accessed on 8/11/05).

Mortality from Cardiovascular Disease

Between 1990 and 2003, cardiovascular disease death rates declined for all Montanans and the general US population. CVD age-specific death rates increased sharply after age 55 for all Montanans. Before age 45, CVD age-specific death rates were negligible for adult Montanans.

Mortality from Heart Disease and Stroke

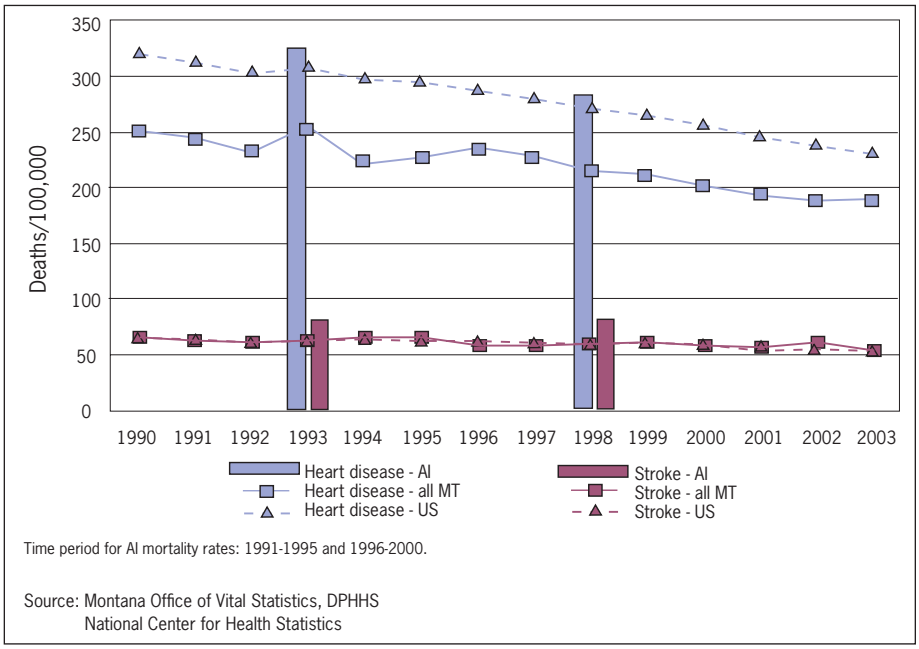
For the general US population and Montana, heart disease mortality rates declined over the past decade. However, the decline in Montana was slightly slower than for the US. From the beginning of the decade (1991-1995) to the end of the decade (1996-2000), the age adjusted heart disease mortality rate for American Indians declined but remained higher than either the general US population or Montana's total population. (Figure 2)

Of the 2,747 CVD deaths in Montana in 2003, 571 deaths (21%) were due to stroke. From 1990-2003, stroke death rates for all Montanans and the general US population declined at almost the same rate. (Figure 2) Montana American Indians experienced higher stroke mortality rates compared to either the general US population or Montana's total population.

Heart Disease and Stroke Mortality Trends in Montana American Indians

While the vast majority of deaths due to heart disease and stroke (87%) are in Montana's white population, a considerable disparity in these mortality rates exists between American Indians and whites in Montana. From 1991-1995 and 1996-2000, heart disease and stroke mortality declined significantly in whites but not in American Indians. During these time periods, premature deaths (i.e., deaths before age 65) from heart disease and stroke were considerably higher in Indian men (45% and 36%, respectively) and Indian women (29% and 28%) compared to white men (21% and 11%) and white women (8% and 7%).[3]

Figure 2. Age-adjusted heart disease and stroke mortality rates for all Montanans, Montana American Indians (AI) and the US, 1990-2003.



Time period for AI mortality rates: 1991-1995 and 1996-2000.

Source: Montana Office of Vital Statistics, DPHHS
National Center for Health Statistics

[3] Harwell TS, Oser CS, Okon NJ, Fogle CC, Helgerson SD, Gohdes D. Defining disparities in cardiovascular disease for American Indians: Trends in heart disease and stroke mortality among American Indians and whites in Montana, 1991-2000. *Circulation*. 2005 October 11;112(15):2263-7.

MODIFIABLE CARDIOVASCULAR RISK FACTORS

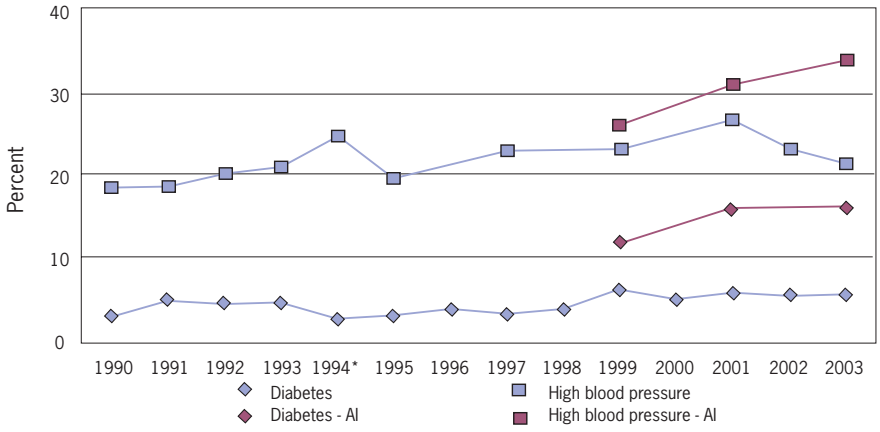
Diabetes

From 1990-2003, the prevalence of diabetes reported by adults in Montana steadily increased. (Figure 3) In 2003, Montana American Indians reported diabetes three times more frequently than all Montanans. Among Montana American Indians, the diabetes prevalence increased four percentage points from 12% in 1999 to 16% in 2001 and 2003.

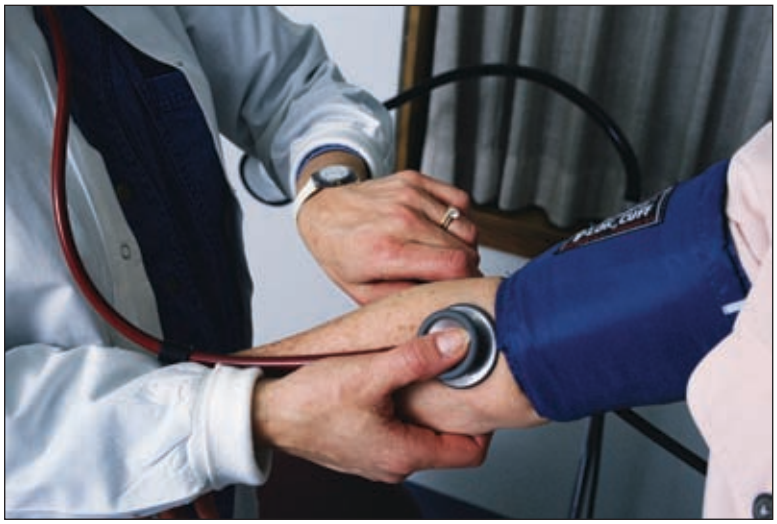
High Blood Pressure (HBP)

From 1990 to 2001, the prevalence of HBP among all Montanans steadily increased. (Figure 3) However, after 2001 the prevalence of HBP declined slightly to 21% in 2003 for all Montanans. Over a five-year time-period (1999 to 2003), the prevalence of HBP among Montana American Indians increased eight percentage points (from 26% to 34%).

Figure 3. Trends in prevalence of diabetes and high blood pressure among all Montana and American Indian adults, 1990-2003.



Source: Montana BRFSS, DPHHS, 1990-2003.
*Diabetes question changed in 1994 to exclude females with gestational diabetes.
Diabetes and high blood pressure question only asked in 1999, 2001 and 2003 for Montana AI.
Blood pressure questions not asked in 1996, 1998 and 2000 for all Montana.



High Blood Cholesterol

The percent of Montana adults reporting a history of high blood cholesterol increased from 1990 to 2003. (Figure 4) In 1990, 25% of Montana adults reported high blood cholesterol; in 2003 the prevalence increased to 30%. In 1999, 23% of Montana American Indians reported high blood cholesterol, and in 2003, this prevalence increased seven percentage points to 30%.

Obesity

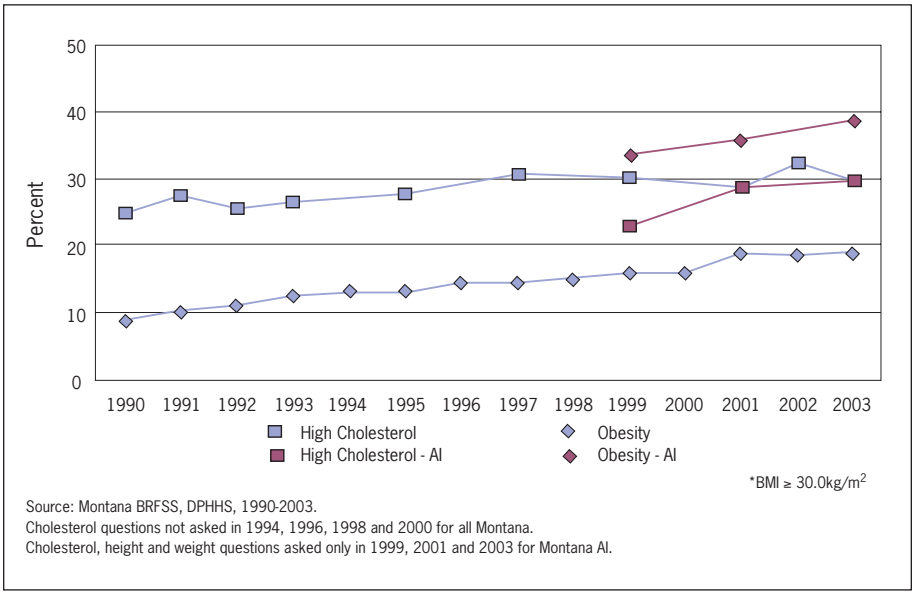
In Montana, the prevalence of obesity among adults increased steadily from 1990 to 2001. (Figure 4) Yet from 2001 to 2003, the obesity prevalence remained constant at 19%. From 1999 to 2003, the prevalence of obesity for Montana American Indian adults was double that of Montana, with a prevalence ranging from 34% to 39%.

Current Tobacco Use

Adults in Montana reported current use of tobacco at slightly lower percentages than adults in the US from 1990 to 2003.[4] For Montana American Indians during 1999 to 2003, the prevalence of current smoking was almost double that of all Montanans and the general US population.

In 2003, 20% of all Montanans and 36% of American Indians in Montana reported current use of tobacco.

Figure 4. Trends in prevalence of high blood cholesterol and obesity* among all Montana and American Indian adults, 1990-2003.



Source: Montana BRFSS, DPHHS, 1990-2003.
Cholesterol questions not asked in 1994, 1996, 1998 and 2000 for all Montana.
Cholesterol, height and weight questions asked only in 1999, 2001 and 2003 for Montana AI.

[4] BRFSS Website www.cdc.gov/brfss

HEART ATTACK AND STROKE

Heart Attack Self-Reported Signs/Symptoms Knowledge

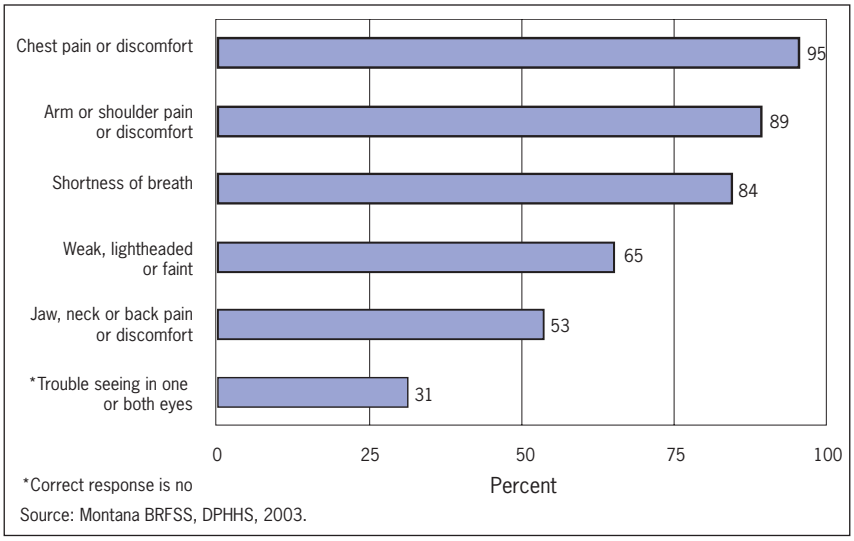
In 2003, over 80% of respondents could correctly recognize the following heart attack symptoms (Figure 5):

- chest pain/discomfort – 95%
- pain or discomfort in arm or shoulder – 89%
- shortness of breath – 84%

Less than 65% of respondents correctly identified feeling weak, lightheaded or faint. Fifty-three percent identified pain or discomfort in the jaw, neck, or back as heart attack symptoms. However, only 13% of adult Montanans knew all symptoms of heart attack (including "no" on the decoy symptom of trouble seeing in one or both eyes).

The majority of respondents (85%) were aware that they should call 911 if someone is having a heart attack or stroke. Respondents 65 years and older (78%) were less likely to be aware of calling 911 if someone is having a heart attack or stroke compared to younger respondents, 18-44 years (86%), or those 45-64 years of age (87%).

Figure 5. Prevalence of heart attack signs/symptoms awareness among Montana adults, 2003.



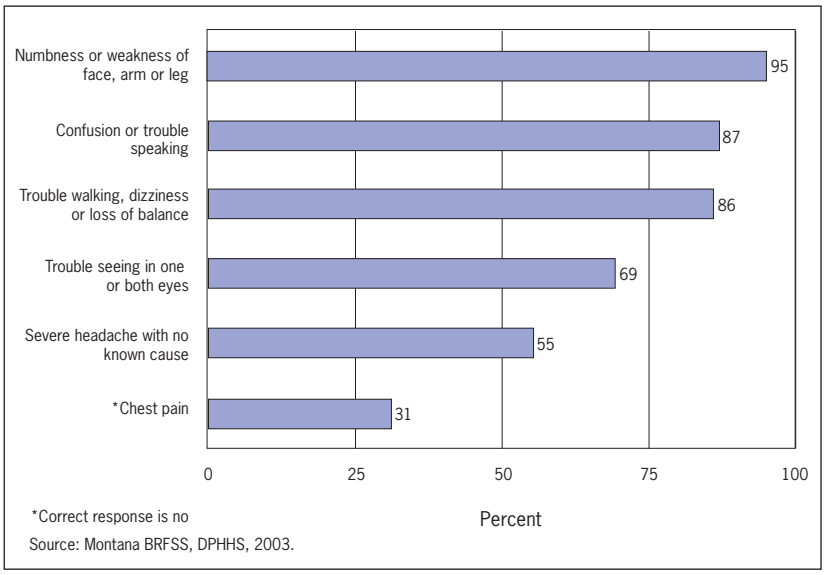
Stroke Self-Reported Signs/Symptoms Knowledge

Over 85% of Montana respondents were likely to recognize the following as stroke symptoms in 2003 (Figure 6):

- numbness or weakness of face, arm or leg – 95%
- confusion or trouble speaking – 87%
- trouble walking – 86%

Fewer respondents were aware that dizziness or loss of balance and trouble seeing in one or both eyes are symptoms of stroke.

Figure 6. Prevalence of stroke signs/symptoms awareness among Montana adults, 2003.

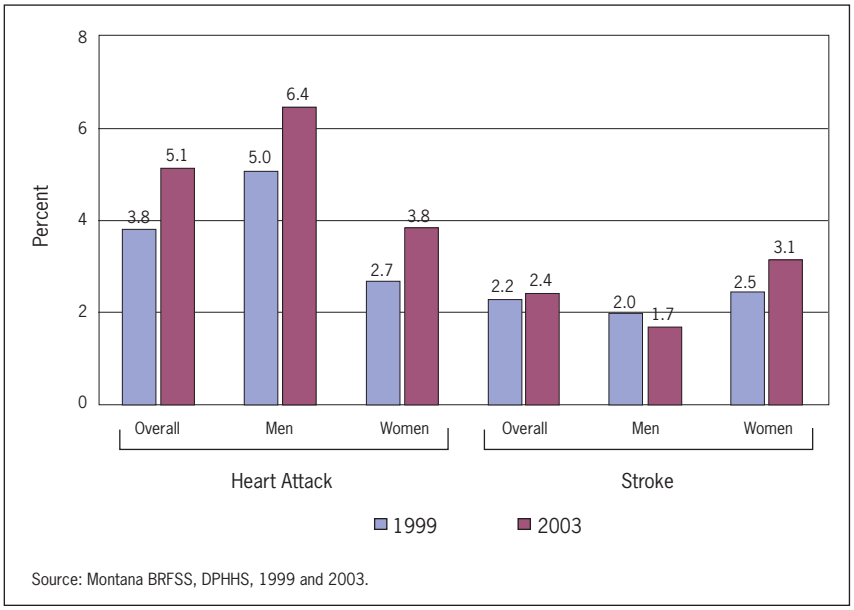


PREVALENCE OF SELF-REPORTED HEART ATTACK AND STROKE

The percentage of Montana's adult population who reported ever having experienced a heart attack increased from 3.8% in 1999 to 5.1% in 2003. (Figure 7)

The overall lifetime prevalence of stroke reported in Montana did not change significantly from 1999 (2.2%) to 2003 (2.4%). (Figure 7) However, the prevalence of stroke reported by women increased compared to men, who showed a slight decrease from 1999 to 2003.

Figure 7. Proportion of Montana adults who reported having a heart attack or stroke, by sex, 1999 and 2003.



Source: Montana BRFSS, DPHHS, 1999 and 2003.

DISCUSSION AND CONCLUSION

Modifiable risk factors for CVD are common in Montana, and the trends show that the levels of obesity, diabetes, high blood pressure and high blood cholesterol increased steadily from 1990 to 2003. American Indian adults in Montana continued to smoke and to report having diabetes and high blood pressure more frequently than all Montanans over the decade.

In summary, the burden of CVD is high in Montana, and the prevalence of modifiable risk factors is increasing. American Indians are at very high risk for heart disease and stroke with particularly high rates of diabetes, hypertension and cigarette smoking contributing to the risk. Premature cardiovascular mortality is alarmingly high among American Indians. The burden of CVD in the state indicates the need for concentrated efforts on prevention, treatment and control of heart disease and stroke.

HEALTHCARE

Many challenges exist to fully address heart disease and stroke issues that affect all Montanans. These barriers may include:

- Inadequate control of hypertension and high blood cholesterol.
- The cost of regular healthcare visits for those residents lacking health insurance.
- Insufficient insurance coverage for medications and services to manage heart disease, stroke and cardiovascular risk factors.
- Geographical barriers in frontier counties that may limit residents' access, or rapid transport, to larger hospitals that can treat stroke and heart attack.
- Continuity of care once cardiac and stroke patients return home.

In spite of these challenges, progress is being made to develop more comprehensive, coordinated systems in hospitals and EMS services throughout the state. The end result will be improved care of cardiac and stroke patients.

HEALTHCARE GOAL 1

Decrease heart disease and stroke mortality and morbidity among adults in Montana

OBJECTIVE 1:

A. Decrease the percentage of adult Montanans who report three or more risk factors for cardiovascular disease (smoking, diabetes, high blood pressure, high cholesterol levels, and obesity) from 7% in 2003 to 6% in 2010. [measured by the Behavioral Risk Factor Surveillance System (BRFSS)]

B. Decrease the percentage of adult American Indians in Montana who report three or more risk factors for cardiovascular disease (smoking, diabetes, high blood pressure, high cholesterol levels, and obesity) from 18.2% in 2003 to 17.0% in 2009. [measured by American Indian adapted-BRFSS]

C. Decrease the percentage of adult Montanans with metabolic syndrome as adapted from the Behavioral Risk Factor Surveillance System (defined as 3 or more of the following indicators: diabetes, high blood pressure, high cholesterol levels, and obesity) from 4.8% in 2003 to 4.0% in 2010. [measured by BRFSS]

D. Decrease the percentage of adult Montanans (aged 45 years and older) who report a history of cardiovascular disease (heart attack, angina or stroke) from 11.7% in 2003 to 9.0% in 2010. [measured by BRFSS]

E. Decrease the percentage of adult American Indians in Montana (aged 45 years and older) who report a history of cardiovascular disease (heart attack, angina or stroke) from 18.9% in 2003 to 16.0% in 2009. [measured by American Indian adapted-BRFSS]

STRATEGIES:

- Encourage appropriate treatment of high blood pressure and elevated cholesterol levels by:
  - Ensuring that health care providers in clinics and hospitals have access to a variety of resources on the Joint National Committee VII[5] guidelines that can be used for diagnosis and treatment of high blood pressure.
  - Disseminating educational materials via health care providers, pharmacies and community organizations to encourage those at risk to control their high blood pressure.

[5] Chobanian AV, Bakris GL, Black HR, Cushman WC, Green LA, et.al. and the National High Blood Pressure Education Program Coordinating Commitee. Seventh Report of the Joint National Committee on Prevention, Detection, Evaluation, and Treatment of High Blood Pressure. *Hypertension*. Dec 2003;42:1206-1252.

- Assisting primary care clinics to send targeted mailings to patients who have not had their low-density lipoprotein (LDL) levels checked within the past year.
- Conducting "Take Control" campaigns and clinic-based interventions that encourage Montanans to control their cholesterol levels and blood pressure.

LEAD AGENCY: Montana Cardiovascular Health Program

- Promote the recommended standards of care for adults with diabetes by:
  - Encouraging cholesterol quality improvement projects in primary care settings focusing on patients with diabetes.
  - Providing physicians feedback on results from the cholesterol quality improvement projects.
  - Promoting interventions with advancing therapy and practice patterns to improve control of patients' cholesterol levels and blood pressure.

  LEAD AGENCY: Montana Diabetes Project
- Promote control of diabetes through physician offices, outpatient clinics and diabetes educators. Assist patients with control of their diabetes through self-management goals and objectives.

  LEAD AGENCY: Montana Diabetes Project
- Implement care profiles for patients with diabetes in primary care practices, and send patients customized letters containing recent lab values, goals for those values, and recommended testing frequency.

  LEAD AGENCY: Montana Diabetes Project
- Pilot the Primary Prevention Quality Care Management System (computer-based registry) with selected health care providers to monitor metabolic syndrome, pre-diabetes and cardiovascular risk factors including high blood pressure and elevated cholesterol levels.

  LEAD AGENCY: Montana Diabetes Project

- Conduct blood pressure and cholesterol training sessions for Community Health Representatives and tribal health workers on Montana reservations to increase knowledge of CVD risk among American Indians.

  LEAD AGENCIES: Montana Cardiovascular Health Program and Montana Diabetes Project
- Promote tobacco use cessation by:
  - Encouraging patients who smoke and are at risk for heart disease and stroke to use the Montana Tobacco Quit Line (1-800-485-QUIT).
  - Providing evidence-based adult and youth cessation services.
  - Coordinating with the American Indian Tobacco Work Group to provide culturally appropriate education to all health care providers who serve American Indian groups.

  LEAD AGENCY: Montana Tobacco Use Prevention Program

HEALTHCARE GOAL 2

Improve the care of patients who have been hospitalized with a heart attack or stroke.

OBJECTIVE 2:

A. By 2010, increase the number of American Association of Cardiovascular and Pulmonary Rehabilitation (AACVPR) certified cardiac rehabilitation programs from 7 to 9. [measured by cardiac rehabilitation survey]

B. By 2010, increase the number of Joint Commission on Accreditation of Healthcare Organizations (JCAHO) certified primary stroke centers from 2 to 4. [measured by JCAHO certification]

C. Increase the percentage of Montana hospitals with written tissue plasminogen activator (tPA) protocols for treating stroke patients, when appropriate, from 67% in 2004 to 75% in 2010. [measured by hospital assessment]

STRATEGIES:

- Develop a statewide quality improvement program for outpatient cardiac rehabilitation programs.

  LEAD AGENCIES: Montana Association of Cardiovascular and Pulmonary Rehabilitation and Montana Cardiovascular Health Program

- Develop a coordinated approach to improve the care of patients who have had a stroke by:
  - Using standardized indicators for performance measurement.
  - Establishing continuity of care procedures between large facilities and smaller community hospitals.
  - Promoting hospital use of standing orders, clinical pathways and discharge instructions when caring for patients who have had a stroke.
  - Promoting hospital use of guidelines from the Brain Attack Coalition and American Stroke Association upon discharge of patients who have had a stroke.

  LEAD AGENCIES: Montana Cardiovascular Health Program and Stroke Workgroup

- Develop a state stroke initiative to:
  - Enhance collaboration and networking among hospitals.
  - Provide continuing education opportunities and assist community hospitals with assessing/treating stroke patients and sharing treatment protocols.
  - Investigate the use of telehealth to assist rural healthcare providers in acute management of stroke patients.
  - Promote consistent use of a stroke screening tool by EMS personnel.
  - Implement a statewide stroke protocol for EMS providers.
  - Reach consensus on a statewide data registry.

  LEAD AGENCY: Stroke Workgroup and Montana Cardiovascular Health Program

- Provide "state of the art" cardiovascular disease Continuing Medical Education/continuing education to health professionals via annual conferences such as the Cardiovascular Health Summit, the Mining City Cardiovascular Conference, and the Yellowstone Regional Stroke Conference.

  LEAD AGENCIES: Montana Cardiovascular Health Program, St. James Healthcare, and St. Vincent Healthcare

- Promote hospital policies to ensure that patients who are admitted for a heart attack or stroke are prescribed a statin or other cholesterol-lowering drug.

  LEAD AGENCIES: Stroke Workgroup, Montana Cardiovascular Health Program, and hospitals collecting heart attack indicator data

- Assist hospitals, particularly Critical Access Hospitals, in the care of heart attack patients upon admission and discharge.

  LEAD AGENCY: Mountain-Pacific Quality Health Foundation

- Develop community-specific Secondary Prevention Resource Guides for patients who have had a heart attack or stroke.

  LEAD AGENCY: Montana Cardiovascular Health Program

- In cooperation with Billings Area Indian Health Service, provide surveillance and enhance awareness of the importance of secondary prevention of heart disease.

  LEAD AGENCY: Montana Cardiovascular Health Program

COMMUNITY

Rapid response to a heart attack or stroke can spell the difference between survival, disability, and death. Educating community members to recognize the symptoms of heart attack and stroke helps to ensure that victims receive or seek care as quickly as possible.

By working with communities, public health agencies can effectively reach priority populations and link those at high risk for heart disease and stroke with the appropriate healthcare system. Local groups are positioned to engage community members because they understand the unique character of their town and the type of outreach that may be more effective. These local groups can also enhance heart disease and stroke prevention activities by helping to raise their community's awareness of signs and symptoms, risk factors and the need to use 911.

See Appendix B for the American Heart Association warning signs of heart attack and stroke.

COMMUNITY GOAL 1

Improve community awareness of heart attack and stroke signs/symptoms and risk factors, and decrease the time between onset of symptoms and treatment of heart attack or stroke.

OBJECTIVE 1:

A. Increase the number of Montana counties participating in the heart attack signs and symptoms public awareness campaigns from 1 in 2005 to 4 in 2010.

B. Increase the percentage of adults in Montana who can correctly identify 4 or more signs and symptoms of heart attack from 77% in 2003 to 82% in 2009. [measured by BRFSS]

C. Increase the percentage of adults 45 years and older who can correctly identify 3 or more heart attack signs and symptoms using a modified BRFSS open-ended heart attack module from 58% in 2005 to 65% in 2006. [measured by community survey]

STRATEGIES:

- Expand the DPHHS heart attack signs and symptoms campaigns to additional communities.

  LEAD AGENCY: Montana Cardiovascular Health Program

- Increase awareness that cardiovascular disease is also a woman's disease, by supporting and implementing the American Heart Association's guidelines for preventing heart disease and stroke in women that are based on a woman's individual cardiovascular health.[6]

  LEAD AGENCIES: American Heart Association and Montana Cardiovascular Health Program

[6] Mosca L, Appel LJ, Benjamin EJ, Berra K, Chandra-Strobos N, et.al. Evidence-Based Guidelines for Cardiovascular Disease Prevention in Women. *Circulation.* 2004;109:672-693.

OBJECTIVE 2:

A. Increase the number of Montana counties participating in the stroke public awareness campaigns from 2 in 2005 to 5 in 2010.

B. Increase the percentage of adults in Montana who can correctly identify 4 or more signs and symptoms of stroke from 75% in 2003 to 80% in 2009. [measured by BRFSS]

C. Increase the percentage of adults 45 years and older who can correctly identify 3 or more signs and symptoms of stroke using a modified BRFSS open-ended stroke module from 39% in 2005 to 44% in 2006. [measured by community surveys]

STRATEGIES:

- Expand the DPHHS stroke signs and symptoms health education projects to additional communities. Create culturally appropriate educational messages for American Indian communities.

  LEAD AGENCY: Montana Cardiovascular Health Program

OBJECTIVE 3:

- Increase the percentage of adult Montanans who are aware of the need to call 911 if they thought someone was having a heart attack or stroke from 85% in 2003 to 89% in 2009. [measured by BRFSS]

STRATEGIES:

- Promote AED placement in community sites such as malls, local airports, and community centers.

  LEAD AGENCIES: Emergency Medical Services (EMS) Section of DPHHS and Montana Cardiovascular Health Program

- Promote legislation establishing a statewide AED registry.

  LEAD AGENCIES: American Heart Association and Montana Cardiovascular Health Program

- Support Emergency Medical Dispatch (EMD) training and protocols to ensure emergency coding and management of stroke and heart attack-related 911 calls.

  LEAD AGENCIES: Montana Cardiovascular Health Program and Department of Administration Public Safety Services Bureau

- Promote Enhanced 911 coverage throughout Montana.

  LEAD AGENCIES: EMS Section of DPHHS, American Heart Association, and Department of Administration Public Safety Services Bureau

OBJECTIVE 4:

- Decrease the percentage of Montana adults who smoke cigarettes from 20% in 2003 to 12% in 2010. [measured by BRFSS]

STRATEGIES:

- Increase the number of callers to the Montana Tobacco Quit Line (1-866-485-QUIT).

  LEAD AGENCY: Montana Tobacco Use Prevention Program

- Promote the Quit Line by partnering with Emergency Food Programs; the Special Supplemental Nutrition Program for Women, Infants, and Children and other groups that consistently meet with the general population.

  LEAD AGENCY: Montana Tobacco Use Prevention Program

- Work with local and state tobacco advocacy groups to promote tobacco-free environments in communities.

  LEAD AGENCY: American Heart Association and Montana Tobacco Use Prevention Program

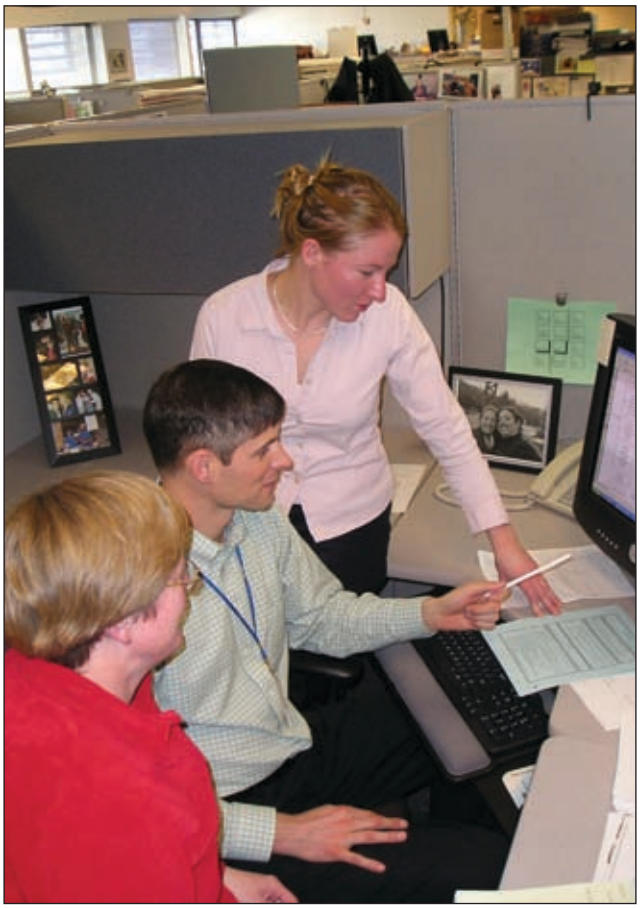
- Support sufficient funding of community tobacco prevention programs.

  LEAD AGENCY: Montana Tobacco Use Prevention Program

WORKSITE

POLICY AND ENVIRONMENTAL CHANGE IN WORKSITES

The workplace is an ideal location to make policy and environmental changes that promote cardiovascular health. However, according to surveys conducted by the Montana Cardiovascular Health Program, few Montana worksites have made such changes. Barriers include the cost of establishing and maintaining wellness programs, the need to inform executives about wellness issues, and lack of an on-site champion or management support.



Policy examples specific to cardiovascular disease include:

- Providing insurance coverage for rehabilitation services after employees have a heart attack or stroke.
- Providing coverage for tobacco cessation therapies.
- Offering screening and follow-up with a provider for treatment of high blood pressure and elevated cholesterol levels.

Environmental examples include:

- Automated External Defibrillators (AEDs) within close proximity and available staff trained in cardiopulmonary resuscitation (CPR) and use of AEDs in the event an employee suffers a heart attack.
- Signage posted on stroke risk factors.
- Tobacco-free work environments and surrounding campuses.

Policy and environmental supports to reduce risk of heart disease and stroke can improve employee health, impact employee healthcare costs, decrease absenteeism, and positively affect the employer's bottom line.

WORKSITE GOAL 1

Engage Montana employers in providing policies, environmental conditions, programs, benefits, and strategies that reduce the risk of heart disease and stroke among their employees.

OBJECTIVE 1:

A. By 2010, increase from 54% to 59% the percentage of Montana's survey respondents (>250 employees) with wellness component mean score of ≥5. [measured by survey of Montana's larger businesses]

B. By 2010, increase from 41% to 44% the percentage of Montana's survey respondents (<250 employees) with wellness component mean score of ≥3. [measured by survey of Montana's smaller businesses]

C. By 2010, increase by 10% the number of Montana employers that are implementing worksite risk reduction programs with an emphasis on blood pressure or cholesterol. [Baseline data is calculated from 2000 and 2005 worksite surveys of Montana businesses.]

STRATEGIES:

- Engage government, nonprofit, and for-profit employers in providing cardiovascular risk reduction programs that:
  - Offer employees screenings, referrals, and follow-up with providers to control blood pressure and cholesterol levels.
  - Place AEDs in the worksite and train staff in CPR and usage of AEDs.
  - Increase employees' awareness of the signs and symptoms of a heart attack and stroke and the need to call 911 immediately.
  - Promote the Tobacco Quit Line for employees.

  LEAD AGENCY: Montana Cardiovascular Health Program

- Provide health risk assessments, resources, and toolkits to at least 20 employers across the state.

  LEAD AGENCIES: Governor's Council on Worklife Wellness and the Montana Cardiovascular Health Program

- Acknowledge employers that offer comprehensive cardiovascular risk reduction programs through recognition by the Governor's Council on Worklife Wellness annual awards program.

  LEAD AGENCY: Governor's Council on Worklife Wellness

- Encourage tribal organizations to consider clean indoor air policies.

  LEAD AGENCY: Montana Tobacco Use Prevention Program

OBJECTIVE 2:

By 2006, conduct an assessment of wellness offerings in 400 small businesses (<250 employees), and publish a report to complement the previous worksite wellness survey of Montana's larger employers.

STRATEGIES:

- Identify the most common cardiovascular risk reduction components offered by smaller businesses and the challenges they encounter in providing and maintaining those services.

  LEAD AGENCY: Montana Cardiovascular Health Program

- Using survey results, collaborate with two worksites to conduct a pilot and address small business barriers to implementing a cardiovascular risk reduction program. Promote realistic measures that smaller worksites can take to reduce employees' blood pressure and blood cholesterol risk.

  LEAD AGENCY: Montana Cardiovascular Health Program

OBJECTIVE 3:

By 2007, survey Montana insurance companies to assess coverage of primary and secondary preventive cardiovascular services and medications for employees who smoke, have high blood pressure, elevated cholesterol levels, or who have had a heart attack or stroke.

STRATEGY:

- Determine barriers to and incentives for providing adequate insurance coverage of preventive cardiovascular services.

  LEAD AGENCY: Montana Cardiovascular Health Program

OBJECTIVE 4:

Using results from the 2007 insurance company assessment, by 2010, increase by 10% the number of insurance companies providing comprehensive coverage and reimbursement for heart disease and stroke prevention and treatment.

STRATEGIES:

- Encourage Montana worksites to provide health insurance coverage of heart disease and stroke-related primary and secondary prevention services including tobacco cessation therapies and Medical Nutrition Therapy.

  LEAD AGENCIES: Governor's Council on Worklife Wellness and the Montana Cardiovascular Health Program

- Promote adequate insurance coverage of medications used for treatment of high blood pressure, high cholesterol, heart disease, and cardiac/stroke rehabilitation.

  LEAD AGENCY: Montana Cardiovascular Health Program

PROGRAM EVALUATION

Program evaluation is important and necessary to improve program operations, measure program achievement or progress, demonstrate accountability to stakeholders, manage program resources, focus program priorities, and advocate for the program. CDC defines evaluation as the systematic collection of information about the activities, characteristics and outcomes of programs to make judgments about the program, improve program effectiveness; and/or inform decisions about future programming. It will be integrated into all program components (e.g., interventions, training and technical assistance, strategic partnerships, etc.).

Montana's evaluation plan is based on CDC's evaluation framework, a practical tool designed to summarize and organize the essential elements of any program evaluation.[7] (Figure 8) This evaluation plan will include both process and outcome measures and will give an overall picture of planned evaluation activities in order to assess the effectiveness of the CVH Program and so that required staff time and resources can be identified.

Program evaluation will assist in answering several broad questions:

1) Is the intervention reaching the target population?

2) Is it being implemented in the ways specified in the evaluation plan?

3) Is it effective?

The goals, objectives, and strategies established in this plan will help guide Montana's Cardiovascular Health Program to reduce cardiovascular disease.

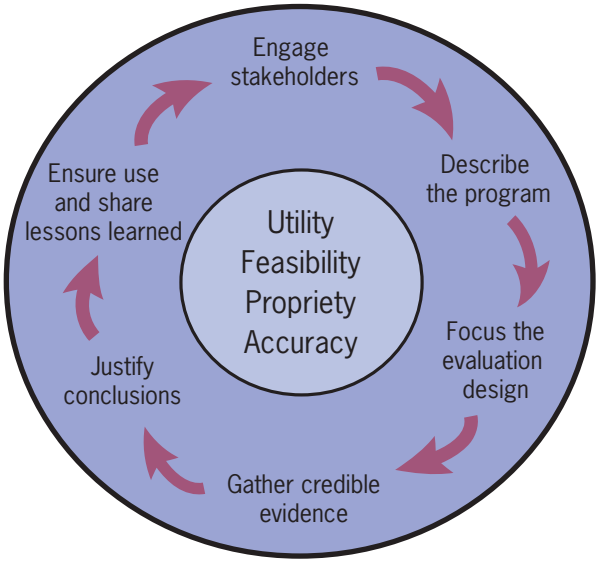


Figure 8. Program Evaluation Approach (circular)

[7] Centers for Disease Control and Prevention. State Heart Disease and Stroke Prevention Program: Evaluation Concepts. Atlanta, GA:US Department of Health and Human Services, Center for Disease Control and Prevention, 2004.

GLOSSARY

AED..... Automated External Defibrillator

AHA ..... American Heart Association

AI..... American Indians

ASA..... American Stroke Association

BRFSS ..... Behavioral Risk Factor Surveillance System

CDC..... Centers for Disease Control and Prevention

CPR..... Cardiopulmonary Resuscitation

CVD ..... Cardiovascular Disease

DPHHS..... The Montana Department of Public Health and Human Services

ED ..... Emergency Department

EMD..... Emergency Medical Dispatch

EMS..... Emergency Medical Services

HBP..... High Blood Pressure

IHS..... Indian Health Service

Obesity ..... Adults with a Body Mass Index (BMI) at or above 30.0 kg/m^2

Quality of Life..... This phrase is used to describe a general sense of happiness and satisfaction with our lives and environment. General quality of life encompasses all aspects of life, including health, recreation, culture, rights, values, beliefs, aspirations, and the conditions that support a life containing these elements.[8]

tPA..... Tissue plasminogen activator

YRBS..... Youth Risk Behavior Survey

[8] U.S. Department of Health and Human Services. *Healthy People 2010*, 2nd ed. With Understanding and Improving Health and Objectives for Improving Health. 2 vols. Washington DC:U.S. Government Printing Office, November 2000, page 10.

APPENDIX A: PROGRESS ON MONTANA CARDIOVASCULAR DISEASE PREVENTION AND CONTROL PLAN 2000

The Montana Cardiovascular Disease Prevention and Control Plan 2000 included objectives and strategies in the following areas:

- tobacco use prevention
- reduction of hypertension (high blood pressure) and cholesterol
- reduction of overweight and obesity
- improvement in physical activity and nutrition

For the first three years of the plan, the Cardiovascular Health Program addressed health promotion strategies and conducted statewide policy and environmental assessments. In the past two years, the Cardiovascular Health Program gradually shifted its focus to blood pressure, blood cholesterol, heart disease and stroke to match the revised priorities of CDC's Division for Heart Disease and Stroke Prevention.

Partners such as the American Heart Association, Montana Tobacco Use Prevention Program, Montana Diabetes Project, Eat Right Montana coalition, and the Montana Dietetic Association played a vital role in implementing selected 2000-2005 cardiovascular state plan strategies.

The greatest achievements include the following:

- Tobacco: creating policies on smoke-free environments; increasing the tax on cigarettes; and establishing a Quit Line.
- Hypertension: monitoring blood pressure control and hypertension treatment for patients with diabetes.
- Secondary prevention: developing community-specific guides on secondary prevention resources for patients recovering from heart attack or stroke; creating a directory on free and reduced cost medications for indigent patients.
- Physical activity: expanding "Walk to School Day" statewide and developing a physical activity video for older American Indians.
- Nutrition: obtaining state funding for the WIC Farmers' Market Nutrition Program; expanding the number of schools offering the School Breakfast Program; assuring that menu standards for meals in correctional facilities follow national dietary standards; promoting 5 A Day in communities through mini-grants; continuing Eat Right Montana's "Healthy Families" nutrition and physical activity media campaign; and increasing the number of community gardens through mini-grants.

These accomplishments were only possible because multiple programs and agencies at the local and state level clearly focused on the issues to advocate for a policy change or to implement a project. A similar mobilization of resources and a commitment to take action are needed to fulfill the vision of the 2006–2010 Montana Heart Disease and Stroke State Plan.

APPENDIX B: AHA WARNING SIGNS

The following information is from the American Heart Association Web site.[9] Coronary heart disease is America's No. 1 killer. Stroke is No. 3 and a leading cause of serious disability. That's why it's so important to reduce your risk factors, know the warning signs, and know how to respond quickly and properly if warning signs occur.

HEART ATTACK

Some heart attacks are sudden and intense—the "movie heart attack," where no one doubts what's happening. But most heart attacks start slowly, with mild pain or discomfort. Often people affected aren't sure what's wrong and wait too long before getting help. Here are signs that can mean a heart attack is happening:

- **Chest discomfort**. Most heart attacks involve discomfort in the center of the chest that lasts more than a few minutes, or that goes away and comes back. It can feel like uncomfortable pressure, squeezing, fullness or pain.
- **Discomfort in other areas of the upper body**. Symptoms can include pain or discomfort in one or both arms, the back, neck, jaw or stomach.
- **Shortness of breath**. May occur with or without chest discomfort.
- **Other signs**. These may include breaking out in a cold sweat, nausea or lightheadedness.

If you or someone you're with has chest discomfort, especially with one or more of the other signs, don't wait longer than a few minutes (no more than 5) before calling for help. Call 9-1-1... Get to a hospital right away.

Calling 9-1-1 is almost always the fastest way to get lifesaving treatment. Emergency medical services staff can begin treatment when they arrive—up to an hour sooner than if someone gets to the hospital by car. Staff members are also trained to revive someone whose heart has stopped. Patients with chest pain who arrive by ambulance usually receive faster treatment at the hospital, too.

CARDIAC ARREST

Cardiac arrest strikes immediately and without warning. Here are the signs:

- **Sudden loss of responsiveness**. No response to gentle shaking.
- **No normal breathing**. The victim does not take a normal breath when you check for several seconds.
- **No signs of circulation**. No movement or coughing.

If cardiac arrest occurs, **call 9-1-1** and begin CPR immediately. If an automated external defibrillator (AED) is available and someone trained to use it is nearby, involve them.

STROKE

The American Stroke Association says these are the warning signs of a stroke:

- **Sudden numbness or weakness of the face, arm or leg, especially one side of the body.**
- **Sudden confusion, trouble speaking or understanding.**
- **Sudden trouble seeing in one or both eyes.**
- **Sudden trouble walking, dizziness, loss of balance or coordination.**
- **Sudden, severe headache with no known cause.**

If you or someone with you has one or more of these signs, don't delay! Immediately call 9-1-1 or the emergency medical services (EMS) number so an ambulance (ideally with advanced life support) can be sent for you. Also, check the time so you'll know when the first symptoms appeared. It's very important to take immediate action. If given within three hours of the start of the symptoms, a clot-bursting drug can reduce long-term disability for the most common type of stroke.

[9] For more information, see www.americanheart.org/presenter.jhtml?identifier=3053#Heart_Attack

APPENDIX C: CLASSIFICATION AND MANAGEMENT OF BLOOD PRESSURE FOR ADULTS

The following table is from the *National High Blood Pressure Education Program*, the *Seventh Report of the Joint National Committee on Prevention, Detection, Evaluation, and Treatment of High Blood Pressure*, US Department of Health and Human Services, National Institutes of Health, National Heart, Lung and Blood Institute.[10]

BP CLASSIFICATION	SBP* MMHG	DBP* MMHG	LIFESTYLE MODIFICATION	INITIAL DRUG THERAPY	
				WITHOUT COMPELLING INDICATION	WITH COMPELLING INDICATION
Normal	< 120	and <80	Encourage	No antihypertensive drug indicated	Drug(s) for compelling indications**
Prehypertension	120-139	or 80-89	Yes		
Stage 1 Hypertension	140-159	or 90-99	Yes	Thiazide-type diuretics for most. May consider ACEI, ARB, BB, CCB, or combination.	Drug(s) for the compelling indications.*** Other antihypertensive drugs (diuretics, ACEI, ARB, BB, CCB) as needed.
Stage 2 Hypertension	≥ 160	or ≥ 100	Yes	Two-drug combination for most*** (usually thiazide-type diuretic and ACEI or ARB or BB or CCB).	

DBP: diastolic blood pressure

SBP: systolic blood pressure

Drug abbreviations: angiotensin converting enzyme inhibitor (ACEI); angiotensin receptor blocker (ARB); beta-blocker (BB); calcium channel blocker (CCB).

* treatment determined by highest blood pressure category.

** Initial combined therapy should be used cautiously in those at risk for orthostatic hypotension.

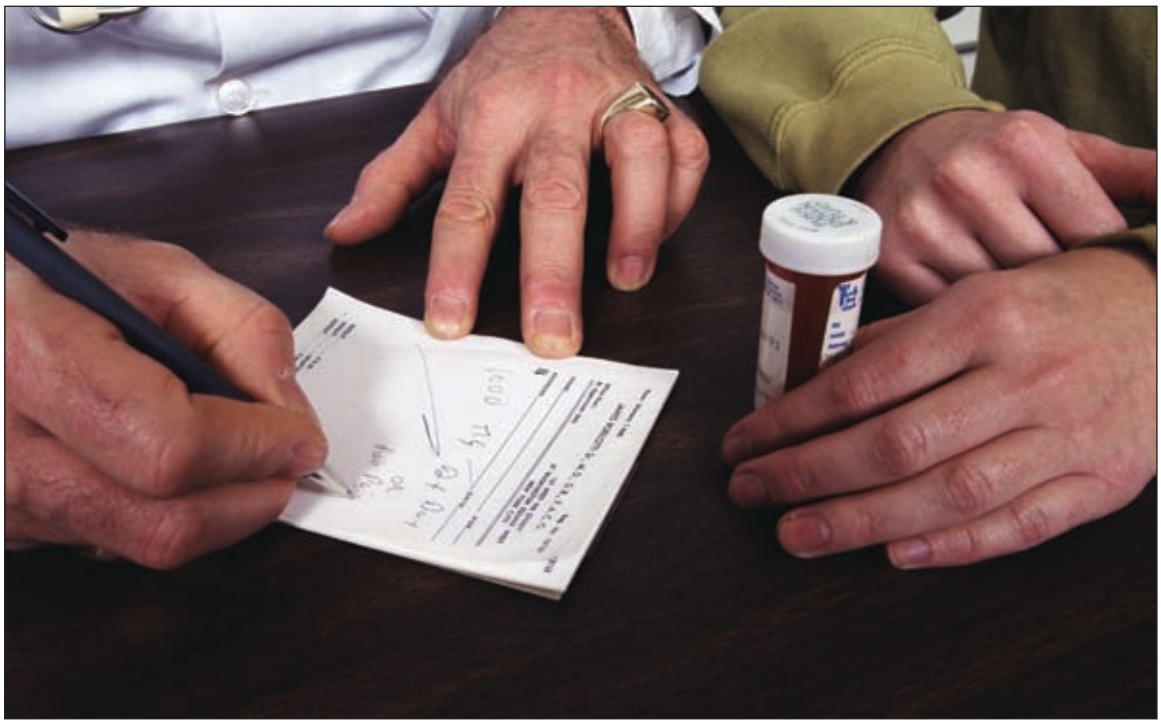
*** Treat patients with chronic kidney disease or diabetes to blood pressure goal of 130/80 mmHg.

[10] For additional information, see www.nhlbi.nih.gov/guidelines/hypertension/express.pdf

APPENDIX D: ATP III CLASSIFICATION OF LDL, TOTAL AND HDL CHOLESTEROL (MG/DL)

The following table is from the *National Cholesterol Education Program (NCEP) Expert Panel on Detection, Evaluation and Treatment of High Blood Cholesterol in Adults*.[11]

LDL Cholesterol		Total Cholesterol		HDL Cholesterol	
< 100	Optimal	<200	Desirable	<40	Low
100-129	Near optimal/ above optimal	200-239	Borderline high	>60	High
130-159	Borderline high	>240	High		
160-189	High				
>190	Very high				



[11] For more information, see www.nhlbi.nih.gov/guidelines/cholesterol/atp3xsum.pdf

APPENDIX E: KEY STAKEHOLDERS

"Coming together is a beginning. Keeping together is progress. Working together is success."

Henry Ford

On October 7, 2004, the Montana Cardiovascular Disease/Obesity Task Force began the process of formulating a comprehensive plan that evolved into two state plans – one on heart disease and stroke and one on obesity, nutrition, and physical activity. Joint Task Force and work group members involved in the planning process represent a broad spectrum of key stakeholders interested in the prevention and control of heart disease, stroke, and obesity.

PARTNER AGREEMENTS

Task force members and partners agreed to:

- Develop a five-year heart disease and stroke state plan that includes specific measurable outcomes and strategies;
- Participate throughout all phases of the planning process;
- Identify, implement, and evaluate specific strategies to affect outcomes with state, community and individual partners; and
- Commit resources (e.g. skills, time, etc.) to the development of the plan.

PROCESS

Work group participants identified chairs and recorders as well as a schedule of meetings to take place during the months of October, November, and December. Tasks to be accomplished through those meetings included the following:

- Define the overarching goal of each work group, in keeping with the identified goals of the Heart Disease and Stroke State Plan.
- Develop a short overview of the particular domain, giving a brief description of opportunities and challenges.
- Develop two to five SMART[12] objectives related to the overarching goal.
- Identify the agency or person that is committed to move the strategy forward.

A Native American subcommittee met on January 7, 2005 to develop an over-arching goal, objectives and strategies pertinent to all American Indians in Montana. The group identified three major themes to be woven into all areas of the state plan, as follows:

- Building a legacy of health and wellness for our children and grandchildren;
- Eliminating disparities in health care throughout the state of Montana; and
- Healing historic and emotional issues pertinent to American Indians that create "heavy hearts" and broken lives.

Each work group developed a draft section of the plan and, on January 26, 2005, the Task Force met for a second time to listen and provide feedback regarding these draft sections. This input was then gathered into a first draft of the entire plan and disseminated to all task force and work group members for final comment. These comments were then included in the plan.

[12] SMART objectives are: Specific/Single outcome; Measurable, Achievable, Related/Reasonable, and Time bound. Develop strategies for each of the objectives.

CVD/OBESITY PREVENTION TASK FORCE AND WORK GROUP MEMBERS

A listing of members of the Task Force, State Plan Work Groups, and the Native American subcommittee is provided below.

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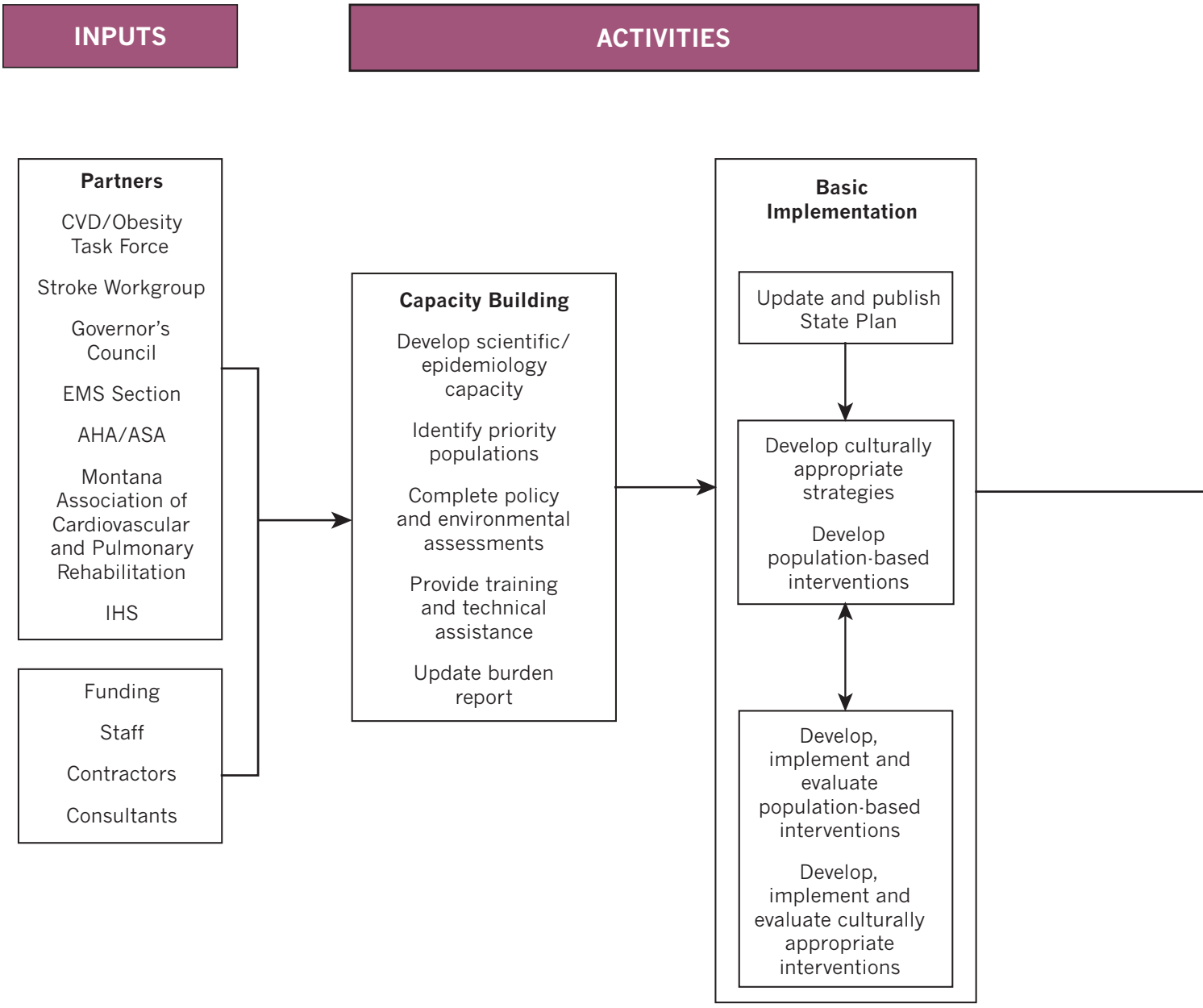
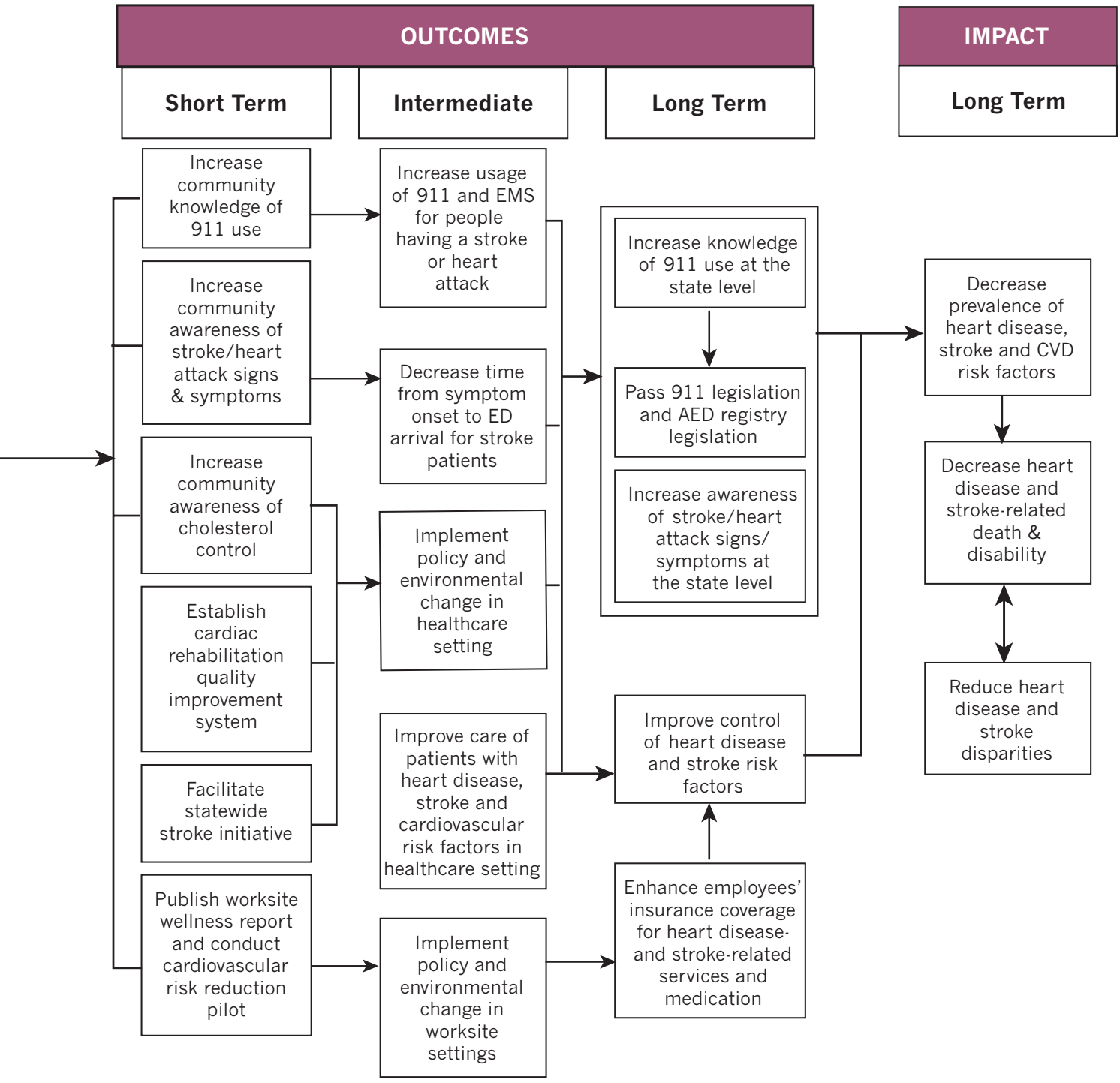
APPENDIX F: LOGIC MODEL




OUTCOMES
IMPACT
Short Term
Intermediate
Long Term
Long Term
Increase community knowledge of 911 use
Increase community awareness of stroke/heart attack signs & symptoms
Increase community awareness of cholesterol control
Establish cardiac rehabilitation quality improvement system
Facilitate statewide stroke initiative
Publish worksite wellness report and conduct cardiovascular risk reduction pilot
Increase usage of 911 and EMS for people having a stroke or heart attack
Decrease time from symptom onset to ED arrival for stroke patients
Implement policy and environmental change in healthcare setting
Improve care of patients with heart disease, stroke and cardiovascular risk factors in healthcare setting
Implement policy and environmental change in worksite settings
Increase knowledge of 911 use at the state level
Pass 911 legislation and AED registry legislation
Increase awareness of stroke/heart attack signs/ symptoms at the state level
Improve control of heart disease and stroke risk factors
Enhance employees' insurance coverage for heart disease- and stroke-related services and medication
Decrease prevalence of heart disease, stroke and CVD risk factors
Decrease heart disease and stroke-related death & disability
Reduce heart disease and stroke disparities